

cording to the AHA/ACC Guidelines was appropriately performed in 89 (88%) of the patients, including 19 (18%) patients who underwent nuclear stress testing and 9 (9%) echocardiograms. Overall perioperative complications were: 7 (7%) CHF, 6 (6%) atrial fibrillation, 9 (9%) ischemia or MI and 2 (2%) deaths. Length of stay was $8.2 \pm SD$ 6 days. Among the 19 patients that underwent nuclear stress testing 5 (26%) developed perioperative CHF, MI, or ischemia. The 12 (12%) patients who did not receive further preoperative testing when indicated did not develop higher perioperative complications than the rest of the cohort.

No difference was found on individual or combined postoperative complications nor in length of stay among the physician groups performing the preoperative evaluation.

Conclusion: The results indicate that the ACC/AHA Preoperative Cardiovascular Guidelines are largely being followed at this hospital and that further non-invasive testing did not lower the perioperative events in this cohort.

1160-128 Prognostic Risk Stratification With SPECT Imaging: Results From a 20,340 Patient Multicenter Registry

D.S. Berman, R. Hachamovich, L. Shaw, H.C. Lewin, A.E. Iskandrian, T. Bateman. *Cedars-Sinai and Tri-City Cardiac Outcomes Research Foundation, LA, CA, USA*

Background: Effective clinical decision making aimed at risk reduction requires use of accurate noninvasive tests that are able to stratify patients (pts) as to their rate of important cardiac outcomes.

Methods: 20,340 pts undergoing SPECT were prospectively enrolled from 3 institutions (follow-up = 1.8 ± 1 years). SPECT summed stress score (SSS) was derived from a 20-segment model incorporating severity/extent of perfusion defects: 80% = dual-isotope, 40% = TI-201, 67% = exercise, 33% = pharmacologic stress imaging. Pooled data were compared for outcome differences using a random effects model correcting for internal validity with a corrected (2-sided) χ^2 test.

Results: Pts were on average = 63 yrs, 33% female. Annual cardiac death (CD) rates = 1.1%, myocardial infarction (MI) = 1.2%. Event rates by SSS:

Annualized Rates (% pts)	Cardiac Death	Myocardial Infarction
SS 0-3 (41%)	0.3%	0.4%
SS 4-8 (17%)	0.8%	1.5%
SS 9-13 (12%)	1.0%	1.2%
SS > 13 (30%)	2.5%	2.2%

* $p < 0.0001$.

The annualized relative risk of CD and CD or MI was 4.8 (95% CI = 3.6-6.3) and 3.7 (95% CI = 3.1-4.5)-fold higher for pts with SSS > 13. There was an 84% (95% CI = 75-90) and 82% (95% CI = 76-84) lower risk of CD and CD or MI in pts with SSS = 0-3.

Conclusion: Clinical decision making aimed at risk reduction employing medical and surgical interventions may be enhanced by the identification of cardiac risk on nuclear SPECT imaging.

1160-129 Increased Incidence of Adverse Events in Follow-up of Patients Not Previously Revascularized but who Have Abnormal SPECT Thallium Studies

W.A. VanDecker, P.M. McNelis, J. Kaspar, A. Iskandrian. *Allegheny University of the Health Sciences, Philadelphia, PA, USA*

Background: The excellent prognosis associated with a normal scintigraphy study is well documented. In an era of outcomes management, it is important to understand the implications of abnormal stress scintigraphy so the aggressiveness of management plans can be tailored appropriately.

Methods: We identified 209 patients in our database with abnormal SPECT thalliums from 6/94-6/96 and made follow-up phone inquiries about health status. The study population included 127 males, 82 females; age 66 ± 11 ; 153 hypertensives, 70 diabetics, 12 with history of myocardial infarction, of whom 84 exercised and 125 underwent pharmacologic stress. Mean follow-up was approximately 17 months. Study patients were identified with no history of previous coronary artery bypass grafting or balloon angioplasty and with no myocardial infarction within 2 months. Studies were scored abnormal with more than mild defects in 2 segments.

Results: During a mean follow-up of 17 months, there were 26 cardiac deaths (12%), 10 non-fatal myocardial infarctions (5%) and 52 (25%) coronary revascularizations. The annual hard event rate (death or infarction) was 12%/year.

Conclusions: Abnormal SPECT images in a previously non-revascularized population are associated with a high incidence of hard cardiac events and are frequently utilized in subsequent revascularization decision making.

1160-130 Prognostic Value of Quantitative Stress Myocardial SPECT Imaging in Patients With Unstable Angina

W.S. Hwang, A. Jafar, H.A. Dakik, Z.-X. Ho, E. Cwaig¹, J.J. Mahmarian, M.S. Varani. *Baylor College of Medicine, Houston, TX, USA; ¹Sponsored by CAPES, Brazil*

Recent guidelines have recommended noninvasive risk stratification of selected patients with unstable angina. However, there are scanty data on the prognostic significance of quantitative stress myocardial perfusion tomography (SPECT) in this patient population. We studied 137 consecutive patients admitted with a clinical diagnosis of unstable angina who underwent quantitative stress SPECT before hospital discharge.

During a mean follow-up of 27 ± 19 months, 22 patients (16%) sustained a hard cardiac event: cardiac death ($n = 15$) and non-fatal myocardial infarction ($n = 7$). By univariate analysis, predictors of subsequent hard events included a history of congestive heart failure ($p = 0.006$), an abnormal SPECT study ($p = 0.031$), the number of abnormal vascular territories on SPECT ($p = 0.013$), perfusion defect size $\geq 15\%$ ($p = 0.035$) and a left ventricular ejection fraction $< 50\%$ ($p = 0.052$). Perfusion defect size was significantly larger in patients with events than in those without events ($21 \pm 18\%$ vs $11 \pm 14\%$, $p = 0.035$). Age, gender, hypertension, prior history of myocardial infarction, number of coronary vessels with $\geq 50\%$ stenosis or revascularization modality were not significantly associated with subsequent events. Multivariate Cox regression analysis identified 2 variables as independent predictors of prognosis: percent defect size $\geq 15\%$ ($p = 0.0027$) and diabetes mellitus ($p = 0.03$).

In conclusion, quantitative SPECT provides independent prognostic information in patients with unstable angina pectoris.

1161 Novel Thrombolytic and Other Acute Therapies for Myocardial Infarction

Wednesday, April 1, 1998, 9:00 a.m.-11:00 a.m.
Georgia World Congress Center, West Exhibit Hall Level
Presentation Hour: 10:00 a.m.-11:00 a.m.

1161-149 Comparative Effects of Streptokinase and Liposome-encapsulated Streptokinase on Platelet Aggregation In Vitro

W.L. Daley, D.E. Lapsley, A.S. Janoff. *West Roxbury VA Medical Center and Harvard Medical School, Boston, MA; The Liposome Company, Princeton, NJ, USA*

Background: Streptokinase (SK) is an effective agent in reducing morbidity and mortality from acute myocardial infarction (MI). Since SK is a bacterial-derived protein, exposure to SK generally induces production of specific antibodies, some of which are capable of initiating platelet aggregation. The presence of these antibodies may limit the effectiveness of the drug and is responsible for the prohibition against retreatment of patients with SK after an initial exposure. Many experimental approaches have been made in an attempt to improve the pharmacologic and immunologic profile of SK. Recent reports have described the enhanced thrombolytic potency of liposome-encapsulated SK (Lipo-SK) in animal models of acute thrombosis when compared to standard SK.

Methods: In this study, we compared equivalent doses of SK and Lipo-SK for their capacity to induce platelet aggregation *in vitro*. These experiments were performed using platelet-rich plasma from fourteen individuals who had previously been treated with 1.5 million units of SK for acute myocardial infarction.

Results: SK in a dose of 5,000 u/ml induced platelet aggregation in 12 of 14 patient samples tested. In contrast, Lipo-SK failed to initiate platelet aggregation in any of the samples ($p < 0.0001$).

Conclusion: These data suggest that the packaging of streptokinase into liposome provides a vehicle for delivering drug that has retained thrombolytic properties while at the same time reduces the immunologically-based undesirable properties of the agent.

1161-150 Mechanical Thrombectomy Using the Angiojet Catheter in the Treatment of Acute Myocardial Infarction

J.A. Silva, S.R. Ramo, R. Kuntz, K. Dandreo, J. Popma. *For the VEGAS I and VEGAS II Investigators; New Orleans, LA, USA*

We studied the clinical and angiographic outcome of 89 pts with acute myocardial infarction (MI) treated with the Angiojet in a multicenter trial. All pts were treated within 24 hours of the clinical onset of MI. Mean age was